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10/614,527	07/07/2003	Damon Gerard van Opdorp	NZ010	9117

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Unisys Corporation		PHAM, MICHAEL
Attn: Michael B. Atlass		
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Unisys Way		
Blue Bell, PA 19424-0001	2167	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
	10/614,527	VAN OPDORP, DAMON GERARD
Office Action Summary	Examiner	Art Unit	
	Michael D. Pham	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52 and 55* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-52 and 55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Detailed Action

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 10/16/06 has been entered.

Claim Objections

2.   Claim 55 is objected to because of the following informalities: Claim 55, which recites

"Storage media containing software as claimed in claim 54" is dependent to claim 54 which

has been cancelled. Appropriate correction is required. The office action will assume claim 55

is dependent to claim 1.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

4.   Claims 24-52 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to non-statutory subject matter.

From MPEP 2106:

> a) Functional Descriptive Material: "Data Structures" Representing Descriptive Mate-rial *Per Se* or Computer Programs Representing Computer Listings *Per Se*
>
> Data structures not claimed as embodied in computer-readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Claims 24 and 46 do not provide functional interrelationships between the data structures and the computer software and hardware components which permit the data structure's functionality to be realized. In fact no such hardware components are being claimed (e.g. memory and processor) for the system.

5.   All other claims dependent to claims 24 and 46 are further rejected for failing to resolve the deficiencies of claims 24 and 46 from which they depend.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7.   Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the

invention. Essentially the body of the claim does not support the preamble, at least in it's

broadest reasonable sense. The claim is inaccurate and incomplete. Applicant's claim

comparing the reference reduced representation with second reduced representation to provide an

indication of the integrity of the second application. However no such indication is created

during a comparison.

8.   Claim 1 recites the limitation "the reference reduced representation" in claim 1 limitation

iv. There is insufficient antecedent basis for this limitation in the claim.

9.   All other claims dependent to claim 1 are further rejected for failing to resolve the

deficiencies of claim 1.

10.   Prior rejections under 35 USC 112 second paragraph in office action 8/23/06 has been

withdrawn.

Claim Rejections - 35 USC § 103

11.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived
> by the manner in which the invention was made.

12.   **Claims 1-2, 4, 6-17, 19-24, 26-39, 41-46, 48-52, and 55 rejected under 35**

U.S.C. 103(a) as being unpatentable over U.S. Patent 6807632 by Carpentier et. al.

(hereafter Carpentier) further in view of U.S. Patent 6591272 by Williams (hereafter

Williams).

Claim 1:

Carpentier is discloses to "a computer-implemented method for verifying the integrity of a

secondary application" [col. 1 lines 35-36, computer users have no convenient mechanism for

establishing (verifying) the origin or integrity (integrity) of particular content versions (could be

from a secondary application)] comprising the steps of:

    i.   "obtaining a first reference reduced representation by" [c. 6. l. 11-14, the

        computed cryptographic hash descriptor file identifier (can have a first

        reference reduced representation) may be included in another list of

        identifiers, and so on, so that complex structures can be reduced and

        represented in extremely compact form.]:

        a.   "creating the first reference reduced representation of the first obtained

            schema metadata using an algorithm" [c. 6 l. 11-14 cryptographic hash

            descriptor file identifier (could be a first reference reduced

            representation of the first obtained schema metadata). Further

            disclosing, c. 8 l. 66, that he cryptographic hash function as MD5

            algorithm.]; and

      b. storing the <u>first</u> reference reduced representation [c. 7 l. 20-24, binary

          sequence identifiers are stored (storing)];

    ii.   "creating a second reduced representation of the second obtained schema

         metadata using the algorithm" [c. 5 l. 58-60, there is no restriction on the data,

         meta data or file system structure that can be stored and referenced by an e-

         clip (could be a second reduced representation).];

    iii.   comparing the reference reduced representation <u>with</u> the second reduced

         representation <u>to provide an indication of the integrity of the second</u>

         <u>application</u> [Col. 8 lines 14-27, The e-clip can be used to find (compare) or

         identify a precise copy of the descriptor file that in turn further includes the

         collection of asset information.]; and

    iv.   controlling execution of the primary application dependent on the <u>indication</u>

         [col. 5 lines 45-47, an e-clip is useful for identifying groups of files

         (indication) that have been backed up, are being transferred (could be a

         primary application), etc.].

Carpentier does not explicitly (Carpentier does disclose, c. 5 l. 35-40, that meta data about

database records cataloged in a descriptor file can be used to identify tables (i.e. could be

construed to be structure of a database) or files to which those records pertain.) disclose

"applying a process to obtain <u>a first</u> schema metadata <u>representative of a database structure of a</u>

<u>database</u> from the secondary application;" and "during execution of <u>a</u> primary application,

applying the process to obtain <u>second</u> schema metadata <u>representative of the database structure</u>

from the secondary application"

On the other hand, Williams, abstract, discloses contents of databases are translated into objects

by reading the database schema metadata to determine data interrelationships and create objects

with nominal human to computer interactions. Further disclosing in figure 2, elements 20a-20e

and col. 7 lines 6-7, a plurality of database schemas (i.e. structure from applications) to be

obtained. Col. 8 lines 18-20 discloses that databases 20(a-e) are enveloped by code 26 to

become pseudo-object 30 desired, along with it's associated metadata 31. Col. 8 lines 42-44,

disclose that the relationship between these objects, called metadata, was transmitted with the

pseudo object.

Hence Williams suggests "applying a process to obtain a first schema metadata representative

of a database structure of a database" (Abstract, reading schema metadata. i.e. could be

obtaining a first schema metadata) "from the secondary application" (could be figure 2, element

21), and "during execution of a primary application" (a primary application of the invention

could be translating, col. 4 line 49) ", applying the process to obtain second schema metadata

representative of the database structure" (Abstract, reading schema metadata. i.e. could be

obtaining a second schema metadata) "from the secondary application" (could be figure 2

element 21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made

to have modified Carpentier to have included "applying a process to obtain <u>a first</u> schema

metadata <u>representative of a database structure of a database</u> from the secondary application;"

and "during execution of <u>a</u> primary application, applying the process to obtain <u>second</u> schema

metadata <u>representative of the database structure</u> from the secondary application" based on the

disclosure of Williams. Both disclosures provide a way in order to transmit or similarly transfer

files. Further, One of ordinary skill in the art would have been motivated to do so for the

purpose of translating objects by reading the schema metadata to determine data

interrelationships thereby enhancing and improving upon Carpentier's disclosure and thus

provide compatibility between applications.

Claim 2:

As to claim 2, Carpentier as modified with Williams discloses "The method as claimed in claim

1 wherein the second application is <u>the</u> database" [Carpentier, c.13 l. 25-34, assets may be

references to database records].

Claim 4:

As to claim 4, Carpentier as modified with Williams discloses "the method as claimed in claim 2

wherein the algorithm is a hash function"[Carpentier, C. 4 l. 49-50, cryptographic hash function

is used to compute an identifier for the data being represented.].

Claim 6:

As to claim 6, Carpentier as modified with Williams discloses "The method as claimed in claim 2 wherein the algorithm is a lossless compression algorithm" [Carpentier, C. 2 l. 8-10, examples of archive utilities include the tar archiving facility common on unix systems and the various 'zip' programs on personal computers.].

Claim 7:

As to claim 7, Carpentier as modified with Williams discloses "the method as claimed in claim 6 wherein the lossless compression algorithm is one selected from the set of zip, gzip, and bzip2" [Carpentier c. 2 l. 8-10, examples of archive utilities include tar archiving facility common on unix systems and the various 'zip' programs on personal computers].

Claim 8:

As to claim 8, Carpentier as modified with Williams discloses "The method as claimed in claim 2 wherein the first reference reduced representation is stored by embedding the representation within the primary application" [c. 12 l. 11-14, "such e-clips may be embedded in and readily accessed from database applications, legacy applications, running on mainframes, text retrieval applications, websites, etc.].

Claim 9:

As to claim 9, Carpentier as modified with Williams discloses "The method as claimed in claim 2 wherein the first reference reduced representation is stored by embedding the representation within configuration files for the primary application" [Carpentier, Col. 12 lines 30-36, "If the

unique identifier is verified in step 310, then control is transferred to step 312 and the recipient

builds the directory structure specified in the descriptor file. Programming logic is applied to

perform system configurations and file operations to create the required directories, using

programming operations such as those described by H[t]ML, for example."].

Claim 10:

As to claim 9, Carpentier as modified with Williams discloses "The method as claimed in claim

2 wherein step (i) is repeated before steps (ii) to (v) at least one time when an expected change

occurs to the schema metadata in the database" [Col. 1 lines 28-31, "digital information is

highly subject to change and few methods are available to inspect the contents of the digital

information to reliably recognize whether it has been changed since some prior time or event."

Col. 3 lines 1 – 9, "Currently, it is necessary to keep track of both the files that are on the

requesting computer and the files that need to be added so that proper updates can be made. It

would be useful if there existed a way to specify all of the files that are to be transferred and to

encapsulate that specification in such a way that would allow the files to be retrieved from the

most convenient place (locally, if possible). It would further be useful if such a method would

allow the files to be reliably verified as the correct files.].

Claim 11:

As to claim 11, Carpentier as modified with Williams discloses "The method as claimed in claim

2, wherein the process includes organizing the extracted schema metadata using a nested and

determinable method" [Carpentier, Col. 5 lines 30-36, "Having such file directory structure is

helpful in determining how to organize files amongst their respective folders. For example, after

data is lost on a particular computer, the file list can be used to not only identify lost files, but

also to reorganize the files into the appropriate directory structure."].

Claim 12:

As to claim 12, Carpentier as modified with Williams discloses "The method as claimed in claim

11 wherein the nested and determinable method is by alphabetical listing of the schema metadata

elements" [Carpentier, Col. 9 lines 24-29, "The other assets information included with the file

list may include directory information about how the assets are organized within a computer

system, as well as file names, file sizes, time and date stamps for each assets, ownership of the

asset, and other asset meta data as is described below."].

Claim 13:

As to claim 13, Carpentier as modified with Williams discloses "The method as claimed in claim

11 wherein the nested and determinable method is by default database order of the schema

metadata elements" [Carpentier, Col. 9 lines 24-29 "The other assets information included with

the file list may include directory information about how the assets are organized within a

computer system, as well as file names, file sizes, time and date stamps for each assets,

ownership of the asset, and other asset meta data as is described below."]

Claim 14:

As to claim 14, Carpentier as modified with Williams discloses "The method as claimed in claim 11 wherein the nested and determinable method is by creation date order of the schema metadata elements" [Carpentier, Col. 9 lines 24-29 "The other assets information included with the file list may include directory information about how the assets are organized within a computer system, as well as file names, file sizes, time and date stamps for each assets, ownership of the asset, and other asset meta data as is described below."].

Claim 15:

As to claim 15, Carpentier as modified with Williams discloses "The method as claimed in claim 11 wherein the nested and determinable method is by table owner of the schema metadata elements" [Carpentier, Col. 9 lines 24-29 "The other assets information included with the file list may include directory information about how the assets are organized within a computer system, as well as file names, file sizes, time and date stamps for each assets, ownership of the asset, and other asset meta data as is described below."].

Claim 16:

As to claim 16, Carpentier as modified with Williams discloses, "The method as claimed in claim 2 wherein the execution of the primary application is controlled by halting execution of the primary application" [Carpentier, Col. 12 lines 25-28, if the unique identifier is not properly verified, then control is transferred back to step 304 and the request for the file identified in the e-clip is sent again. An error message or other notification may be generated as well.].

Claim 17:

As to claim 17, Carpentier as modified with Williams discloses "The method as claimed in claim

2 wherein the execution of the primary application is controlled by the primary application

sending an error message to one selected from the set of a user of the primary application, a

manager of the primary application, a manager of the database, and the database" [Carpentier,

Col. 12 lines 25-28, if the unique identifier is not properly verified, then control is transferred

back to step 304 and the request for the file identified in the e-clip is sent again. An error

message or other notification may be generated as well.].

Claim 19:

As to claim 19, Carpentier as modified with Williams discloses, "The method as claimed in

claim 2 wherein the process obtains all available schema metadata"[Carpentier, Col. 13 lines 21-

23, "If all files have been received, then control is transferred to step 414 and it is indicated that

all of the e-CLIP files have been obtained"].

Claim 20:

As to claim 20, Carpentier as modified with Williams discloses "The method as claimed in claim

2 wherein the process only obtains the schema metadata which would affect the primary

application if that schema metadata were to change" [Carpentier, Col. 12 lines 25-28, "If the

unique identifier is not properly verified, then control is transferred back to step 304 and the

request for the file identified in the e-CLIP is sent again. An error message or other notification

may be generated as well"].

Claim 21:

As to claim 21, Carpentier as modified with Williams discloses "the method as claimed in claim 2 wherein the process utilizes SQL 92 standard to obtain the schema metadata from the database" [wiliams, col. 3 lines 41-47, SQL]

Claim 22:

As to claim 22, Carpentier as modified with Williams discloses "The method claimed in claim 2 wherein the process utilizes the database's API to obtain the schema metadata from the database" [Col. 13 lines 28-34, "The assets, however, may be references to database records, video clips taken from within larger video streams, or other digital assets stored to be passed to other software programs or processes. Rather than instantiating directories and creating files with the contents of the digital assets, the recipient would make them available via some other standard application programming interface."].

Claim 23:

As to claim 22, Carpentier as modified with Williams discloses "The method as claimed in claim 22 wherein the database's API is a Java database API" [Carpentier, Col. 12 lines 62-67, "The process for broadcasting requests for files, receiving and verifying files, and modifying the broadcast request is accomplished in one embodiment using an importer, which is a small program encoded preferably in the JAVA programming language, or in any other suitable language"].

Claim 24:

Carpentier is discloses "A system for verifying for the integrity of one or more databases" [col. 1

lines 35-36, computer users have no convenient mechanism for establishing (verifying) the

origin or integrity (integrity) of particular content versions (could be from a secondary

application)] comprising:

"i. a plurality of applications adapted to store a plurality of previously calculated

reduced representations of schema metadata" [c. 6 l. 11-14, the computed

cryptographic hash descriptor file identifier (can have a reference reduced

representation of the schema metadata) may be included in another list of identifiers,

and so on, so that complex structures can be reduced and represented in extremely

compact form.],

"to newly calculate a plurality of reduced representations from the plurality of

extracted schema metadata" [c. 5 l. 58-60, there is no restriction on the data, meta

data or file system structure that can be stored and referenced by an e-clip (could be a

calculated reduced representation)] ", and

to compare each of plurality of previously calculated reduced representations with its

corresponding newly calculated reduced representation to provide an indication of the

integrity of one or more databases" [c. 8 l. 14-27, the e-clip can be used to find

(compare) or identify a precise copy of the descriptor file that in turn further includes

the collection of asset information.]; and

ii. one or more databases adapted to receive requests for schema metadata from the

plurality of applications and to transmit schema metadata to the plurality of

applications dependent of the indication [col. 5 lines 45-47, an e-clip is useful for

identifying groups of files (indication) that have been backed up, are being transferred

(could be a primary application), etc.].

Carpentier does not explicitly [carpentier does disclose c. 5 l. 35-40, meta data about database

records cataloged in a descriptor file can be used to identify tables (i.e. could be structure of

database) or files to which those records pertain.] disclose "schema metadata representative of

the structure of one or more databases" and "to extract a plurality of schema metadata

representative of database structure from one or more databases".

On the other hand, Williams, abstract, discloses contents of databases are translated into objects

by reading the database schema metadata to determine data interrelationships and create objects

with nominal human to computer interactions. Further disclosing in figure 2, elements 20a-20e

and col. 7 lines 6-7, a plurality of database schemas (i.e. structure from applications) to be

obtained. Col. 8 lines 18-20 discloses that databases 20(a-e) are enveloped by code 26 to

become pseudo-object 30 desired, along with it's associated metadata 31. Col. 8 lines 42-44,

disclose that the relationship between these objects, called metadata, was transmitted with the

pseudo object.

Hence Williams suggests "schema metadata representative of the structure of one or more

databases" and "to extract a plurality of schema metadata representative of database structure

from one or more databases" based on figure 2. Wherein the elements 20a-e disclose a plurality

of database schemas to be obtained.

It would have been obvious to one of ordinary skill in the art at the time the invention was made

to have modified Carpentier to have included "to extract a plurality of schema metadata

representative of database structure from one or more databases" based on the disclosure of

Williams. Both disclosures provide a way in order to transmit or similarly transfer files.

Further, One of ordinary skill in the art would have been motivated to do so for the purpose of

translating objects by reading the schema metadata to determine data interrelationships thereby

enhancing and improving upon Carpentier's disclosure and thus provide compatibility between

applications.

Claim 26:

As to claim 26, Carpentier as modified with Williams discloses "The system as claimed in claim

24 wherein the reduced representations are calculated using a hash function"[Carpentier, C. 4 l.

49-50, cryptographic hash function is used to compute an identifier for the data being

represented.].

Claim 27:

As to claim 27, "The system as claimed in claim 26 wherein the hash function is one selected

from the set of MD5 and CRC32" [Carpentier c. 8 line 66.].

Claim 28:

As to claim 28, Carpentier as modified with Williams discloses "The system as claimed in claim

24 wherein reduced representations are calculated using a lossless compression algorithm.

" [Carpentier, C. 2 l. 8-10, examples of archive utilities include the tar archiving facility common

on unix systems and the various 'zip' programs on personal computers.].

Claim 29:

As to claim 29, Carpentier as modified with Williams discloses "The system as claimed in claim

28 wherein the lossless compression algorithm is one selected from the set of zip, gzip, bzip2"

[Carpentier c. 2 l. 8-10, examples of archive utilities include tar archiving facility common on

unix systems and the various 'zip' programs on personal computers].

Claim 30:

As to claim 30, Carpentier as modified with Williams discloses "The system as claimed in claim

24 wherein each previously calculated reduced representation is stored by embedding the

representation within its associated application." [c. 12 l. 11-14, "such e-clips may be embedded

in and readily accessed from database applications, legacy applications, running on mainframes,

text retrieval applications, websites, etc.].

Claim 31:

As to claim 31, Carpentier as modified with Williams discloses "The system as claimed in claim

24 wherein each previously calculated reduced representation is stored by embedding the

representation within configuration files for its associated application" [Carpentier, Col. 12 lines

30-36, "If the unique identifier is verified in step 310, then control is transferred to step 312 and

the recipient builds the directory structure specified in the descriptor file. Programming logic is

applied to perform system configurations and file operations to create the required directories,

using programming operations such as those described by H[t]ML, for example."].

Claim 32:

As to claim 32, Carpentier as modified with Williams discloses "The system as claimed in claim

24 wherein each schema metadata is organized using a nested and determinable method before

its reduced representation is calculated." [Carpentier, Col. 5 lines 30-36, "Having such file

directory structure is helpful in determining how to organize files amongst their respective

folders. For example, after data is lost on a particular computer, the file list can be used to not

only identify lost files, but also to reorganize the files into the appropriate directory structure."].

Claim 33:

As to claim 33, Carpentier as modified with Williams discloses "The system as claimed in claim 32 wherein the nested and determinable method is by alphabetical listing of the schema metadata elements." [Carpentier, Col. 5 lines 30-36, "Having such file directory structure is helpful in determining how to organize files amongst their respective folders. For example, after data is lost on a particular computer, the file list can be used to not only identify lost files, but also to reorganize the files into the appropriate directory structure."].

Claim 34:

As to claim 34, Carpentier as modified with Williams discloses "The system as claimed in claim 32 wherein the nested and determinable method is by default database order of the schema metadata elements." [Carpentier, Col. 5 lines 30-36, "Having such file directory structure is helpful in determining how to organize files amongst their respective folders. For example, after data is lost on a particular computer, the file list can be used to not only identify lost files, but also to reorganize the files into the appropriate directory structure."].

Claim 35:

As to claim 35, Carpentier as modified with Williams discloses "The system as claimed in claim 32 wherein the nested and determinable method is by creation date order of the schema metadata

elements." [Carpentier, Col. 5 lines 30-36, "Having such file directory structure is helpful in

determining how to organize files amongst their respective folders. For example, after data is lost

on a particular computer, the file list can be used to not only identify lost files, but also to

reorganize the files into the appropriate directory structure."].

Claim 36:

As to claim 36, Carpentier as modified with Williams discloses "The system as claimed in claim

32 wherein the nested and determinable method is by table owner of the schema metadata

elements." [Carpentier, Col. 5 lines 30-36, "Having such file directory structure is helpful in

determining how to organize files amongst their respective folders. For example, after data is lost

on a particular computer, the file list can be used to not only identify lost files, but also to

reorganize the files into the appropriate directory structure."].

Claim 37:

As to claim 37, Carpentier as modified with Williams discloses "The system as claimed in claim

24 wherein the result of each comparison controls execution of its associated application."

[Carpentier, Col. 12 lines 25-28, "If the unique identifier is not properly verified, then control is

transferred back to step 304 and the request for the file identified in the e-CLIP is sent again. An

error message or other notification may be generated as well."]

Claim 38:

As to claim 38, Carpentier as modified with Williams discloses "The system as claimed in claim 37 wherein the execution of the application is controlled by halting execution of the application." [Carpentier, Col. 12 lines 25-28, "If the unique identifier is not properly verified, then control is transferred back to step 304 and the request for the file identified in the e-CLIP is sent again. An error message or other notification may be generated as well."]

Claim 39:

As to claim 39, Carpentier as modified with Williams discloses "The system as claimed in claim 37 wherein the execution of the application is controlled by the application sending an error message to one selected from the set of a user of the application, a manager of the application, a manager of the associated database, and the associated database." [Carpentier, Col. 12 lines 25-28, "If the unique identifier is not properly verified, then control is transferred back to step 304 and the request for the file identified in the e-CLIP is sent again. An error message or other notification may be generated as well."]

Claim 41:

As to claim 41, Carpentier as modified with Williams discloses, "The system as claimed in claim 24 wherein each application is adapted to extract all available schema metadata from each database"[Carpentier, Col. 13 lines 21-23, "If all files have been received, then control is transferred to step 414 and it is indicated that all of the e-CLIP files have been obtained"].

Claim 42:

As to claim 42, Carpentier as modified with Williams discloses "The system as claimed in claim 24 wherein each application is adapted to extract the schema metadata which would affect the application if that schema metadata were to change." [Carpentier, Col. 12 lines 25-28, "If the unique identifier is not properly verified, then control is transferred back to step 304 and the request for the file identified in the e-CLIP is sent again. An error message or other notification may be generated as well"].

Claim 43:

As to claim 43, Carpentier as modified with Williams discloses "The system as claimed in claim 24 wherein each application is adapted to utilize the SQL92 standard to extract the schema metadata from each database." [wiliams, col. 3 lines 41-47, SQL]

Claim 44:

As to claim 44, Carpentier as modified with Williams discloses "The system as claimed in claim 24 wherein each application is adapted to utilize the database's API to extract the schema metadata from each database." [Carpentier, Col. 13 lines 28-34, "The assets, however, may be references to database records, video clips taken from within larger video streams, or other digital assets stored to be passed to other software programs or processes. Rather than instantiating directories and creating files with the contents of the digital assets, the recipient would make them available via some other standard application programming interface."].

Claim 45:

As to claim 45, Carpentier as modified with Williams discloses "The system as claimed in claim

44 wherein the database's API is a Java database API." [Carpentier, Col. 12 lines 62-67, "The

process for broadcasting requests for files, receiving and verifying files, and modifying the

broadcast request is accomplished in one embodiment using an importer, which is a small

program encoded preferably in the JAVA programming language, or in any other suitable

language"].

Claim 46:

A system for verifying the integrity of a database including:

      i.   an application(c. 5 l. 45-47, transferring files (could be an application));

      ii.   a stored reduced representation of schema metadata of a database [c. 6 l. 11-14,

the computed cryptographic hash descriptor file identifier (can have a reference reduced

representation of the schema metadata) may be included in another list of identifiers, and so on,

so that complex structures can be reduced and represented in extremely compact form.]; and

      iii.   a verification engine which upon connection to the database obtains a

            reduced representation of schema metadata from the database [C. 12 lines

            57-62, "once the descriptor file is retrieved, the e-CLIP recipient is able to

            verify that the correct descriptor file has been recovered and then

            broadcasts requests for the files specified in the descriptor file.] and

            compares it with the stored reduced representation in order to provide an

indication of the integrity of the database [c. 8 l. 14-27, the e-clip can be

used to find (compare) or identify a precise copy of the descriptor file that

in turn further includes the collection of asset information.] to control the

application based upon the indication [col. 5 lines 45-47, an e-clip is

useful for identifying groups of files (indication) that have been backed

up, are being transferred (could be a primary application), etc.].

Carpentier does not explicitly [carpentier does disclose c. 5 l. 35-40, meta data about database

records cataloged in a descriptor file can be used to identify tables (i.e. could be structure of

database) or files to which those records pertain.] disclose "schema metadata representative of

the structure of a database".

On the other hand, Williams, abstract, discloses contents of databases are translated into objects

by reading the database schema metadata to determine data interrelationships and create objects

with nominal human to computer interactions. Further disclosing in figure 2, elements 20a-20e

and col. 7 lines 6-7, a plurality of database schemas (i.e. structure from applications) to be

obtained. Col. 8 lines 18-20 discloses that databases 20(a-e) are enveloped by code 26 to

become pseudo-object 30 desired, along with it's associated metadata 31. Col. 8 lines 42-44,

disclose that the relationship between these objects, called metadata, was transmitted with the

pseudo object.

Hence Williams suggests "schema metadata <u>representative of the structure of</u> one or more

databases" and "to extract a plurality of schema metadata <u>representative of database structure</u>

from one or more databases" based on figure 2. Wherein the elements 20a-e disclose a plurality

of database schemas to be obtained.

It would have been obvious to one of ordinary skill in the art at the time the invention was made

to have modified Carpentier to have included "to extract a plurality of schema metadata

<u>representative of database structure</u> from one or more databases" based on the disclosure of

Williams. Both disclosures provide a way in order to transmit or similarly transfer files.

Further, One of ordinary skill in the art would have been motivated to do so for the purpose of

translating objects by reading the schema metadata to determine data interrelationships thereby

enhancing and improving upon Carpentier's disclosure and thus provide compatibility between

applications.

Claim 48:

As to claim 48, Carpentier as modified with Williams discloses "The system as claimed in claim

46 wherein the reduced representations are calculated using a hash function." [Carpentier, C. 4 l.

49-50, cryptographic hash function is used to compute an identifier for the data being

represented.].

Claim 49:

As to claim 49, Carpentier as modified with Williams discloses "The system as claimed in claim

46 wherein the stored reduced representation is stored by embedding the representation within

the application." [Carpentier, Col. 12 lines 30-36, "If the unique identifier is verified in step 310,

then control is transferred to step 312 and the recipient builds the directory structure specified in

the descriptor file. Programming logic is applied to perform system configurations and file

operations to create the required directories, using programming operations such as those

described by H[t]ML, for example."].

Claim 50:

As to claim 50, Carpentier as modified with Williams discloses "The system as claimed in claim

48 wherein each schema metadata is organized using a nested and determinable method before

its reduced representation is calculated." [Carpentier, Col. 5 lines 30-36, "Having such file

directory structure is helpful in determining how to organize files amongst their respective

folders. For example, after data is lost on a particular computer, the file list can be used to not

only identify lost files, but also to reorganize the files into the appropriate directory structure."].

Claim 51:

As to claim 51, Carpentier as modified with Williams discloses, "The system as claimed in claim

46 wherein the application is controlled by halting execution of the application." [Carpentier,

Col. 12 lines 25-28, if the unique identifier is not properly verified, then control is transferred

back to step 304 and the request for the file identified in the e-clip is sent again. An error

message or other notification may be generated as well.].

Claim 52:

As to claim 52, Carpentier as modified with Williams discloses "The system as claimed in claim

46 wherein the application is controlled by the application sending an error message to one

selected from the set of a user of the application, a manager of the application, a manager of the

associated database, and the associated database." [Carpentier, Col. 12 lines 25-28, if the unique

identifier is not properly verified, then control is transferred back to step 304 and the request for

the file identified in the e-clip is sent again. An error message or other notification may be

generated as well.].

Claim 55:

Storage media containing software as claimed in claim 54 [carpentier, col. 17 lines 67-

67 and col. 18 line 1, "In addition, embodiments of the present invention further relate to

computer storage products (software) with a computer-readable medium (storage media) that

have computer code thereon for performing various computer-implemented operations. The

media and computer code may be those specially designed and constructed for the purposes of

the present invention, or they may be of the kind well known and available to those having skill

in the computer software arts."].

13.   Claims 18 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Patent 6807632 by Carpentier et. al. (hereafter Carpentier) as applied to further in

view of U.S. Patent 6591272 by Williams (hereafter Williams) and U.S. Patent 6957221 by

Hart et. al. (hereafter Hart)

Claim 18:

Carpentier and Williams do not explicitly disclose

"The method as claimed in claim 2 <u>further comprising</u> the step of:

      i.   requesting a schema stability lock of the database."

However Hart, discloses, Col. 5 lines 43-47, audit blocking which is "..a structured package

containing potentially many Audit Records (in the extreme situation, it is also possible that a

single Audit Block could only contain a partial Audit Record). There are a number of control

words at the beginning and end of each audit block.".

Therefore it would have been obvious to one of ordinary skill to modify Carpentier to include the

steps of requesting a schema stability lock of the database for the purpose of avoiding

interference with changes being made to the data.

Claim 40:

As to claim 40, Carpentier and Williams do not explicitly disclose "The system as claimed in

claim 24 wherein the plurality of applications are further adapted to request a schema stability

lock of the one or more databases."

However Hart, discloses, Col. 5 lines 43-47, audit blocking which is "..a structured package

containing potentially many Audit Records (in the extreme situation, it is also possible that a

single Audit Block could only contain a partial Audit Record). There are a number of control

words at the beginning and end of each audit block.".

Therefore it would have been obvious to one of ordinary skill to modify Carpentier and Williams

to include the steps of requesting a schema stability lock of the database for the purpose of

avoiding interference with changes are being made to the data.

14.   **Claims 3, 5, 25, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable**

over U.S. Patent 6807632 by Carpentier et. al. (hereafter Carpentier) as applied to further

in view of U.S. Patent 6591272 by Williams (hereafter Williams) and Admitted Prior art

from the background section of the specifications (hereafter background)

<u>Claim 3:</u>

As to claim 3, Carpentier and Williams do not explicitly disclose "The method as claimed in

claim 2 wherein the <u>first or second</u> schema metadata is selected from the set of tables, columns in

tables, datatypes of columns, lengths of columns, custom database data types, foreign keys,

constraints, stored procedures, views, triggers, indices, and scheduled jobs."

However, the Background discloses on page 1: "Schema metadata includes tables, columns in

tables, datatypes of columns, lengths of columns, custom database data types, foreign keys,

constraints, stored procedures, views, triggers, indices, and scheduled jobs."

It would have been obvious to one of ordinary skill at the time the invention was made to modify

Carpentier and Williams to include the steps of having schema metadata selected from the set of

tables columns in tables, datatypes of columns, lengths of columns, custom database data types,

foreign keys, constraints, stored procedures, views triggers, indices, and scheduled jobs based on

the disclosure of the Background for the purpose of assuring "integrity of the structure of

database before using it."

Claim 5:

As to claim 5, "The method as claimed in claim 3 wherein the hash function is one selected from

the set of MD5 and CRC32" [Carpentier c. 8 line 66.].

Claim 25:

As to claim 25, Carpentier and Williams do not explicitly disclose "The system as claimed in

claim 24 wherein the schema metadata is selected from the set of tables, columns in tables, data

types of columns, lengths of columns, custom database data types, foreign keys, constraints,

stored procedures, views, triggers, indices, and scheduled jobs"

However, the Background discloses on page 1: "Schema metadata includes tables, columns in

tables, datatypes of columns, lengths of columns, custom database data types, foreign keys,

constraints, stored procedures, views, triggers, indices, and scheduled jobs."

It would have been obvious to one of ordinary skill at the time the invention was made to modify

Carpentier and Williams to include the steps of having schema metadata selected from the set of

tables columns in tables, datatypes of columns, lengths of columns, custom database data types,

foreign keys, constraints, stored procedures, views triggers, indices, and scheduled jobs based on

the disclosure of the Background for the purpose of assuring "integrity of the structure of

database before using it."

Claim 47:

As to claim 47, Carpentier and Williams do not explicitly disclose "The system as claimed in

claim 46 wherein the schema metadata is selected from the set of tables, columns in tables, data

types of columns, lengths of columns, custom database data types, foreign keys, constraints,

stored procedures, views, triggers, indices, and scheduled jobs."

However, the Background discloses on page 1: "Schema metadata includes tables, columns in tables, datatypes of columns, lengths of columns, custom database data types, foreign keys, constraints, stored procedures, views, triggers, indices, and scheduled jobs."

It would have been obvious to one of ordinary skill at the time the invention was made to modify Carpentier and Williams to include the steps of having schema metadata selected from the set of tables columns in tables, datatypes of columns, lengths of columns, custom database data types, foreign keys, constraints, stored procedures, views triggers, indices, and scheduled jobs based on the disclosure of the Background for the purpose of assuring "integrity of the structure of database before using it."

Response to Amendment

15.   Applicant's arguments with respect to claims 1-52 and 55 have been considered but are moot in view of the new ground(s) of rejection.

Applicant asserts the following:

    a. That it is not possible to identify specific data files merely by looking at the schema metadata. The schema metadata provides descriptive data that explains how the structure of an application is arranged regardless of the actual data stored therein. If an e-clip were to hold schema metadata it could not determine anything about the data within the data files, and so could not determine how to reproduce or compare the data.

In response the examiner respectfully disagrees. C. 5. 1. 35-38 discloses metadata about

database records cataloged in a descriptor file can be used to identify tables or files to which

those records pertain. Tables could essentially be construed as structures. However in order to

more clearly provide schema metadata, a new grounds of rejection has been made.

b. That in fact, Carpentier teaches away from using schema metadata at c. 13 l. 44-51 by

stating that their system is content addressable and that identifiers that are not content

addressable may be readily spoofed.

In response, the examiner respectfully disagrees that Carpentier teaches away from using

schema metadata. Infact, Carpentier discloses that C. 5. 1. 35-38 discloses metadata about

database records cataloged in a descriptor file can be used to identify tables. Therefore,

Carpentier is able to utilize schema metadata such as tables and therefore cannot be said to teach

away.

c. That metadata in Carpentier is used to identify an asset, i.e. data in a file and not a

database structure.

In response, the examiner respectfully disagrees. Infact, Carpentier discloses that C. 5. 1.

35-38 discloses metadata about database records cataloged in a descriptor file can be used to

identify tables. Therefore, Carpentier's metadata does not only identify assets such as data in a

file. Moreover, Williams is further provided in order to provide schema metadata.

    d. Reference3s to directory structure and file system strurctures within Carpentier are not the same as schema metadata representative of a database structure.

    See a and b. Surely, identifying a table could be such things as information on tables.

    e. Therefore the feature of schema metadata representative of a database structure is not disclosed or implied within Carpentier et. al. That Carpentier is directed to transfering, obtaining, and verifying individual data files, whereas the present invention is only interested in verifying the schema of the database rather than any other data stored within.

    In verifying data files of a database in order to transfer there must be a check as to the integrity of whether or not the data is acceptable.

    f. That carpentier does not disclose nor imply the feature of providing an indication of the integrity of a second application (database). Nor does Carpentier disclose the feature of controlling a primary application based on said indication. That this provides a unique way of accessing the schema structure of a database prior to querying the database in order to ensure that the application requesting the database information does not encounter problems during the query.

    In response, the examiner respectfully disagrees. First of all there is no indication of integrity being created. Therefore, no way is the functionality of controlling a primary

application based on said indication can happen. This is just a mere statement of intended

purpose of a comparison. Secondly, nowhere does it say what kind of an indication is provided.

The examiner has essentially equated an indication to be such a thing as if the files are found,

that is an indication for transfer. Hence the primary application, such as transferring will occur

as soon as identified files are indicated. Therefore Carpentier suggests controlling a primary

application based on said indication and providing an indication of the integrity of a second

application e.g. as applicant's agree Carpentier provides a method for verifying.

Conclusion

16.   The prior art made of record listed on PTO-892 and not relied, if any, upon is considered

pertinent to applicant's disclosure.

Contact Information

17.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael D. Pham whose telephone number is (571)272-3924.

The examiner can normally be reached on Monday - Friday 9am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Cottingham can be reached on 571-272-7079. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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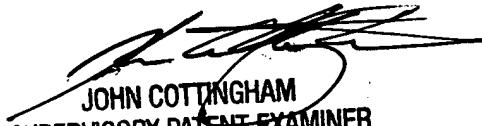
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